REMARKS

Claims 1-14, 17, and 18 are pending in this application.

By this amendment, Applicants amend claim 1 to more appropriately define the claimed subject matter, and claim 9 to correct informalities. Applicants also add claim 18. These amendments and added claims do not add any new subject matter.

"Background" Section

The Examiner cites the "Background" section of the instant application as admitted prior art (Office Action, page 2, paragraph 3). However, the embodiments described in the Background section are not admitted prior art for at least the reason that the Background section does not state, either explicitly or implicitly, that the embodiments described therein constitute prior art. In addition, the Background section forms no part of the rejections set forth in the Final Office Action.

Objected-to Claim 17, New Claim 18

The Examiner objected to claim 17 as dependent upon a rejected base claim, but allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. New independent claim 18 contains the limitations of claim 17, base claim 1 without the current amendment, and intervening claim 14. Thus, new claim 18 is believed to be allowable and does not raise new issues after final.

Objection to Claim 9

The Examiner objected to claim 9 asserting that "demodulated sub signals" should be "the sub signals" (Office Action, page 3, paragraph 5). Claim 9 is being amended to correct these informalities. Thus, this objection is believed to be obviated.

§103(a) Rejection of Claims 1-4, 6-12, and 14 over *Park et al.* and *Klank et al.*

Applicants respectfully traverse the rejection of claims 1-4, 6-12, and 14 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,470,030 B1 to Park et al. ("*Park et al.*") in view of U.S. Patent No. 6,330,293 B1 to Klank et al. ("*Klank et al.*").

To establish a *prima facie* case of obviousness under §103(a), each of three requirements must be met. "First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art," to combine references or modify a reference. MPEP § 2143 (8th ed. Rev. Feb. 2003). Second, a reasonable expectation of success must exist that the proposed modification will work for the intended purpose. *Id.* Moreover, both of these requirements must "be found in the prior art, not in applicant's disclosure." *Id.* Third, the reference or references, taken alone or in combination, must disclose or suggest every element recited in the claims. *Id.*

Claims 1-4, 6, and 14 are allowable over *Park et al.* and *Klank et al.* because these references do not teach or suggest, alone or in combination, each and every element of independent claim 1, from which claims 2-4, 6, and 14 depend. For example, *Park et al.* fails to teach or suggest "a digital broadcast receiving apparatus" comprising, inter alia, "a random sequence generating circuit for generating said PRBS

based on the initial value set in accordance with the frequency of said broadcast channel," as recited in claim 1.

Instead, *Park et al.* discloses an orthogonal frequency division multiplexing (OFDM) receiver system for receiving a transmission signal that comprises frames. "In addition to the transmitted data, the OFDM transmission frame includes scattered pilot cells (SPC), continual pilot carriers (CPC), transmission parameter signaling pilots (TPS), etc." (col. 1, lines 7-55) The OFDM receiver system includes a "Fast Fourier Transform (FFT) processor 710" and a "rearrangement memory 720" that constitute a "pilot signal decoding section 700." (col. 3, lines 44-63) An "equalizing and deinterleaving section 600" has a "channel equalizer 640" that "receives the received SPC and the SPC reference value (REF) of the corresponding SPC position from the rearrangement memory 720 of the pilot signal decoding section 700, and performs channel equalization ..." (Col. 14, lines 55-61; Fig. 13.) The Examiner acknowledges that "Park does not explicitly specify the pseudo-random binary sequence (PRBS) in the pilot signal decoding section of the OFDM system." (Office Action, page 5, paragraph 2.)

Klank et al. does not make up for the deficiencies of *Park et al.* because *Klank et al.* also fails to teach or suggest "a random sequence generating circuit for generating said PRBS based on the initial value set in accordance with the frequency of said broadcast channel," as recited in claim 1.

Instead, *Klank et al.* discloses a method for receiving multicarrier digital signals (Field of the Invention). The value or contents of the scattered and continuous pilot

signals are derived, for example, from a pseudo-random binary sequence W_k for each of the transmitted carriers k." (Col. 1, lines 50-54.)

However, deriving "value or contents of ... pilot signals ... from a pseudo-random binary sequence W_k for each of the transmitted carriers k" (col. 1, lines 52-53), as disclosed in *Klank et al.*, does not constitute "generating said PRBS based on the initial value set in accordance with the frequency of said broadcast channel," as required by claim 1 (emphasis added). A pseudo-random binary sequence is a binary sequence that is created by a deterministic procedure that takes the initial value as input. Although *Klank et al.* discloses multiple pseudo-random binary sequences labeled W_k, where the transmitted carriers are labeled as 'k,' *Klank et al.* fails to teach or suggest that, for each W_k, 'k' is used as the initial value in a deterministic procedure to create W_k, as would be required by claim 1. Thus, *Klank et al.* does not teach or suggest "a random sequence generating circuit for generating said PRBS based on the initial value set in accordance with the frequency of said broadcast channel," as recited in claim 1.

Moreover, neither *Park et al.* nor *Klank et al.* teaches or suggests "a control circuit for controlling one or more of (i) a coding rate, which is a ratio of decoded bits of the main signal to corresponding encoded bits of the main signal, and (ii) a modulation scheme of the reproduction of said main signal in accordance with said reproduced demultiplexed sub signals," as recited in amended claim 1 (emphasis added).

Claims 7-12 are allowable over *Park et al.* and *Klank et al.* because these references do not teach or suggest, alone or in combination, each and every element of independent claim 7, from which claims 8-12 depend. For example, *Park et al.* fails to

teach or suggest "a digital broadcast receiving apparatus" comprising, inter alia, "a deinterleaving circuit for deinterleaving said demultiplexed main signal using the parameter set in accordance with the frequency of said broadcast signal," as recited in claim 7.

For example, "the received SPC and the SPC reference value (REF) of the corresponding SPC position," as disclosed in *Park et al.*, are not used for "deinterleaving," as required by claim 7. Rather, *Park et al.* discloses that "[t]he channel equalizer 640 ... receives the received SPC and the SPC reference value (REF) ... and performs channel equalization ..." (Col. 14, lines 55-62; emphasis added.) "The complex multiplier 630 multiplies the distorted data sample stored in the symbol memory 620 with the complex number of the channel transmission function acquired by the reference SPC of the data symbol to output the equalized data sample" (Col. 14, line 66, to col. 15, line 3; emphasis added.) Equalizing a data sample does not constitute "deinterleaving said demultiplexed main signal," as required by claim 7 (emphasis added).

Klank et al. does not appear to make up for the deficiencies of *Park et al.* The Examiner only relies on *Klank et al.* to allegedly disclose that "the pilot signals are derived from a pseudo-random binary sequence (PRBS) W_k for each of the transmitted carriers" (Office Action, pg. 4, paragraph 4.)

Thus, claim 7 and claims 8-12, which depend from claim 7, should be allowed over *Park et al.* and *Klank et al.*

§103(a) Rejection of Claims 5 and 13 over *Park et al., Klank et al., Mitsubori et al.*

Applicants respectfully traverse the rejection of claims 5 and 13 under 35 U.S.C. §103(a) as being unpatentable over *Park et al.* in view of *Klank et al.* as applied to Japanese Patent Publication 11-145929-A to Mitsubori et al. ("*Mitsubori et al.*").

Claims 5 and 13 are allowable over *Park et al.* and *Klank et al.* for at least the reason that claims 5 and 13 depend from claims 1 and 7, respectively, which are allowable over *Park et al.* and *Klank et al.* for the reasons explained above. The Examiner only relies on *Mitsubori et al.* for the limitations recited in dependent claims 5 and 13. Thus, claims 5 and 13 should be allowed over *Park et al.*, *Klank et al.*, and *Mitsubori et al.*

CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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